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Office - Supreme Court, U.S.
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IN THE
SUPREME COURT OF THE UNITED STATES

_____TERM_____

APPENDIX

NACHMAN STULBACH
Petitioner

-v-

UNITED STATES PATENT
AND TRADEMARK OFFICE
Respondent

PETITION FOR A WRIT OF CERTIORARI
TO THE UNITED STATES COURT OF
CUSTOMS AND PATENT APPEALS

NACHMAN STULBACH
Petitioner

40 Brighton 1st Road
Brooklyn, N.Y. 11235

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APPLICATION FOR

UNITED STATES LETTERS PATENT

ON INVENTION FOR

ELECTRICAL CARS

By: Nachman Stulbach

INVENTOR

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• • • • • •

Nachman Stulbach
1740 Ocean Avenue
Brooklyn, New York, 11230

TO ALL WHOM IT MAY CONCERN:

BE IT KNOWN that I, Nachman Stulbach
a citizen of the United States of America and resident of Brooklyn, New York
have invented certain new and useful improvements in
ELECTRICAL CARS AND VEHICLES
of which the following is a full, clear, concise and exact description:

ELECTRO GENERATING ASSEMBLY IN AN ELECTRIC VEHICLE

BACKGROUND OF THE INVENTION

This invention relates to electric cars and more particularly to an electro-generating assembly in automobiles, rail road cars and other vehicles.

Electric cars are already built and marketed by American automobile companies and prove to function well. However, those cars depend solely on the storage batteries which derive their electric power from the outside, e.i. from the electricity produced by electric power companies which must use tremendous quantities of crude oil to produce the electric current necessary to recharge the storage batteries for those electric cars.

Every car, when in motion, performs mechanical work, which which except for the fact of fulfilling its primary task of transporting the car itself and its load from one place to another, has never been fully recognised and utilised. The same is true for all train and subway cars. There is always excessive mechanical power in abundance in all of the above mentioned vehicles, and this excess of the mechanical power can be harnessed and secured by means of installation of electric generators in these vehicles and converting the reclaimed mechanical power into electric energy. Thus, the conservation of gigantic amounts of electric energy can be achieved without any extra expense for fuel. The installations of the hereby described electro-generating system will not be complex, but create thousands of jobs in the automobile, rail road, electrical and other industries right at the start e.i. initial stages of those installation.

Transportation as such has been the only purpose of the automobile and train and once this goal was fabulously achieved it remained unnoticed that a large portion of mechanical energy in those vehicles remains unused, thus wasted, during the transportation.

Accordingly there is a need for an electric car or vehicle which will be able to pick up the lost excess of mechanical energy and convert it into electrical power. In times when difficulties with oil producing countries are mounting daily such energy producing vehicles can provide the United States of America with an energy resource of gigantic value.

SUMMARY OF THE INVENTION

The principal object of the present invention is to provide a new source of energy through CONSERVATION and reclamation of huge quantities of mechanical energy lost by millions of moving automobiles, trucks, rail-road cars (freight & passenger) subway cars and otherv rotating vehicles, and to convert the reclaimed mechanical energy into electrical power.

It is accordingly an object of the present invention to provide an electro-generating assembly for vehicles, which avoids the problems of prior art devices.

A further object of the present invention is to provide an electric car which utilizes the mechanical power produced by the car and converts it into electrical power for use in connection with driving the car.

Still another object of the present invention is to provide an electric vehicle which reclaims the mechanical energy lost when the vehicle moves.

A further object of the present invention is to provide an electro-generating assembly, which when utilized in rail-road & subway cars and propelled by the rotary motion of their road-wheels, will generate electric power and charge sets of storage batteries with electricity for usage outside of the electro-producing car.

Still a further object of the present invention is to provide an electric automobile which achieves lower cost of transportation through utilizing the reclaimed mechanical energy.

Briefly, in accordance with the present invention there is described a car or vehicle having an electro-generating assembly, with the assembly comprising a electric generator. The shaft of the electric generator is linked either directly or indirectly with the rotating shaft of the road wheels of the car or vehicle to thereby convert the mechanical energy of the moving vehicle into electric energy.

In an embodiment of the invention, the electro-generating system is used to charge storage batteries with electricity while the car is in motion with the storage batteries being utilized to propel the electric car.

In another embodiment, the electro-generating system is used directly to propel the motor driving the the electric car thereby omitting the need for storage batteries while driving.

In still another embodiment of the invention the electro-generating system is used to charge storage batteries in a rail road car with the electricity to be accumulated and utilized for any and all electric energy requirements outside the electro-producing car or vehicle.

The aforementioned objects, features and advatages of the invention will, in part, be pointed out with particularity, and will, in part, become obvious from the following more detailed description of the invention, taken in conjunction with accompanying drawings, which form an integral part thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

Fig. 1 is a schematic plan view of a vehicle showing an electro-generating assembly coupled directly to the vehicle axle.

Fig. 2 is a schematic plan view of a vehicle and showing a dynamoelectric generator coupled to the vehicle axis through a turns multiplier.

Fig. 3 is a schematic plan view of a vehicle and showing an electro-generating assembly coupled through a auxiliary drive member.

Fig. 4 is a schematic plan view of a vehicle showing a plurality of dynamoelectric generators, and

Fig. 5 is a schematic vertical sectional view of a vehicle showing an electro-generating assembly coupled to the vehicle axis through a turns multiplier.

In the various figures of the drawing, like reference characters designate like parts.

• • •

WHILE THE APPLICANT DESCRIBES THE EMBODIMENTS COMPRISING THE PRINCIPLE ELEMENTS OF THE INVENTION IT IS TO BE UNDERSTOOD THAT HE DOES NOT LIMIT HIMSELF TO THE PRECISE CONSTRUCTIONS HEREIN DISCLOSED AND THAT VARIOUS MODIFICATIONS AND CHANGES CAN BE MADE WITHIN THE SCOPE OF THIS INVENTION.

• • •

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to Fig. 1 there is shown an electro-generating assembly having a dynamoelectric generator 2 in front F of the electric car 1. The generator's axis 6 is linked by a rotary motion transferring device, as gear, belt, band, etc. 3 with the car's road wheel axis 5.

Fig. 1 illustrates the basic constructional and functionnl features of the electro-generating assembly provided by the invention. The rotary motion of the car's revolving road-wheels 4 is transmitted to the dynamoelectric generator 2 by means of the rotary motion transferring device 3 such as gear, band, belt, etc.

Referring now to Fig. 2 there is shown an electro-generating assembly having a dynamoelectric generator 2 in front F of the vehicle 1. The generator's axis 6 is linked by a rotary motion transferring device 3 with the vehicle's road-wheel axis 5. The circumference of the vehicle's road-wheel axis 5 is enlarged on the spot 8 where the rotary motion transferring device 3 engages the road-wheel axis 5.

In addition to the feature shown in Fig. 1, Fig. 2 illustrates also another basic structural and funcionnl feature of the electro-generating assembly. In order to manifold or multiply the number of revolutions per minute of the rotating dynamoelectric generator 2 the circumference of the vehicle's road-wheel axis 5 is purposely enlarged, specifically on the spot 8 where the rotary motion transferring device 3 engages the vehicle's road-wheel axis 5.
For the same purpose the circumference of the generator's axis 6 is to be kept as small as practically possible.

Referring now to Fig. 3, there is shown an electro-generating assembly having a dynamoelectric generator 2 in front F of the vehicle 1. The generator's axis 6 is linked by a rotary motion transferring device 3^c with the supplementary axis 7. The supplementary axis 7 is linked by rotary motion transferring devices 3^a, 3^b with the vehicle's road-wheel axis 5.

In the embodiment of Fig. 3, the electro-generator's axis 6 is basically linked directly with the vehicle's road-wheel axis 5. However, if necessary, for purposes of proper positioning of the electro-assembly, a rotating supplementary axis 7 or axes, parallel to the road-wheel axes 5 of the vehicle, may be constructed. The supplementary axis 7 is linked by rotary motion transferring devices 3^a, 3^b with the vehicle's road-wheel axis 5 on one side and by a rotary motion transferring device 3^c with the rotating axis 6 of the dynamoelectric generator on the other side.
The embodiment of Fig. 3 illustrates only in a plain way the idea in cases when the transfer of the rotary motion through an auxiliary drive member is necessary.

Referring now to Fig. 4, there is shown an electro-generating assembly having a multitude of generators 2^a, 2^b, 2^c, 2^d in both the front F and rear of the vehicle. The generator's axes 6^a, 6^b are linked by rotary motion transferring devices 3^a, 3^b with the vehicle's road-wheel axes 5^a, 5^b. The circumferences of the vehicle's road-wheel axes 5^a, 5^b are enlarged on the spots 8^a, 8^b where the rotary motion transferring devices 3^a, 3^b engage the road-wheel axes 5^a, 5^b.

In the embodiment of Fig. 4, in order to require larger quantities of electricity a multi-generator system is installed engaging one or more of the vehicle's road-wheel axes. Specifically, Fig. 4 shows a plurality of dynamoelectric

generators 2^a, 2^b, 2^c, 2^d installed in the vehicle. The axes 6^a, 6^b of the generators are linked by rotary motion transferring devices 3^a, 3^b to the vehicle's road-wheel axes 5^a, 5^b.

Identically as described above in connection with Fig. 2, The vehicle's road-wheel axes 5^a, 5^b are purposely enlarged on the spots 8^a, 8^b where the rotary motion transferring devices 3^a, 3^b engage them in order to increase the number of revolutions per minute of the generators' axes 6^a, 6^b. All generators are driven simultaneously and the electric production is multiplied accordingly to the number and capacity of generators installed.

Referring now to Fig. 5, there is shown an electro-generating assembly inm a electricity producing rail-road car having a dynamoelectric generator 2. The generator's axis 6 is linked by a rotary motion transferring device 3 with the car's road-wheel axis 5, identically as in Fig. 2. The circumference of the car's road-wheel axis 5 is enlarged on the spot 8 in order to multiply the number of turns of the generator's axis 6. The output of the dynamoelectric generator is coupled to the storage batteries 9, with the accumulated electric energy to be used for any and all electric power requirements outside the electro-producing car.

Accordingly, as was described, there is shown an electric car with an improved electric generating system. Electric cars, as known at the present time, are driven by electric power from their storage batteries, e.i. electricity derived from the outside. When the electro-generating system provided by this invention is added to their construction, it will constantly be charging the storage batteries wh with electricity while the car is in motion, thus accumulating in the batteries the electric power produced by every revolution of the car's road-wheels, and using the electricity from the

batteries to propel the car.

The herewith provided electro-generating assembly finds however its full application by energising directly the motor in the electric car driven by motor, thus omitting the usage of the storage batteries while driving.

As described, there is also shown the provided electro-generating assembly installed in the rail-road car with the purpose of electrical power production on a large scale. Every train freight and passenger car, when equipped with the described by this invention electro-generating assembly and sets of storage batteries, can be converted into a small power plant, and the electric energy generated by each vehicle can be used to propel electric automobiles or any other purpose where electric power is required.

The principle concerning ENERGY CONSERVATION and UTILIZATION outlined hereby is not restricted solely to the electric automobile and rail-road car but relates to all other active, rotating vehicles and machines. The general idea is, that the rotary motion of engines and vehicles already working for any productive purpose, can be utilized to simultaneously propel dynamoelectric generators and produce electricity as a byproduct, which per se becomes instantly a very valuable basic product, indeed. The cost of such energy production would be minimal since no additional fuel for vehicles already working on roads, rails, factories, etc. would be required. The realisation of such installation en masse may produce invaluable results of enormous national importance.

ABSTRACT OF THE THE DISCLOSURE

A car or vehicle having an electro-generating assembly which includes a dynamoelectric generator. The shaft of the dynamoelectric generator is linked directly or indirectly with the rotating shaft of the road-wheels of the car or vehicle. In automobiles, the dynamoelectric generator can be utilized to recharge storage batteries, driving the electric car, while the car is in motion. Alternately, storage batteries can be eliminated and the electrogenerator system can be used directly to drive the motor of the electric car. In rail-road cars (freight and passenger) the electro-generating assembly can be utilized to charge storage batteries, with their electricity loads to be used for driving electric automobiles or any other electro-energy requirements, outside or inside the electro-producing vehicle. Using the enlarged shaft at the position of coupling between the generating system and the vehicle shaft will multiply the rotation rate of the generating system and increase enormously their production capacity of electric power.

(12)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
Nachman Stulbach : Examiner M.L. Smith
Serial No. 095,082 : Group Art Unit 316
Filed November 15, 1979
For: ELECTRO-GENERATING ASSEMBLY IN VEHICLES

AMENDMENT

Honorable Commissioner of Patents and Trademarks
Washington, D.C. 20231

Dear Sir:

This is in response to the Official Action dated May 30, 1980.

In the specification:

Kindly replace the original specification with the attached duplicate specification.

In the drawings:

Kindly add Fig. 5, a sectional view of the electro-generating system, which is shown in the preceding plan view Figures 1 to 4.

In the Claims:

Please cancel original claims 1-4 and replace them with the following new claims:

—5. A vehicle having an electro-generating assembly, said assembly comprising a dynamoelectric generator, and coupling means for coupling the drive shaft of said dynamoelectric generator to the axle of the road wheels of said vehicle so that said dynamo electric generator is driven by the rotation of the axle whenever said axle rotates, thereby converting any and all movement of the vehicle into electrical energy.—

—6. An electric vehicle as in Claim 5, wherein the output of said dynamoelectric generator is coupled to the storage batteries whereby said storage batteries are continuously charged as long as the vehicle is in motion.—

—7. An electric vehicle as in Claim 5, and further comprising annular means concentrically formed about the axle of the road wheels of the vehicle at the location of said coupling means, thereby forming an enlargement of the axle whereby the rate of rotation of the dynamoelectric generator shaft will be greater than the rate of rotation of the axle.—

—8. An electric vehicle as in Claim 7, wherein the generator shaft is of smaller diameter than the axle.—

—9. An electric vehicle as in Claim 5, and comprising a plurality of dynamoelectric generators each respectively coupled to the axle of the vehicle.—

—10. An electric vehicle as in Claim 5, wherein the electric vehicle is energized by storage batteries, and wherein the output of said dynamoelectric generator is coupled to the storage batteries, whereby said storage batteries are continuously recharged as long as the vehicle is in motion and as the batteries enrgized the vehicle.

—11. An electric vehicle as in Claim 5, wherein the electric vehicle is driven by a motor, and wherein the output of said dynamoelectric generator is directly coupled to the motor, whereby the motor of the vehicle serves to drive the vehicle.—

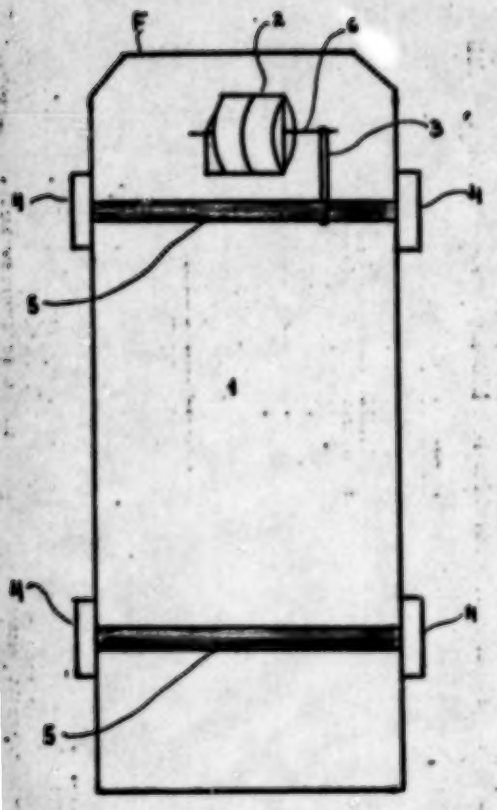


FIG. 1

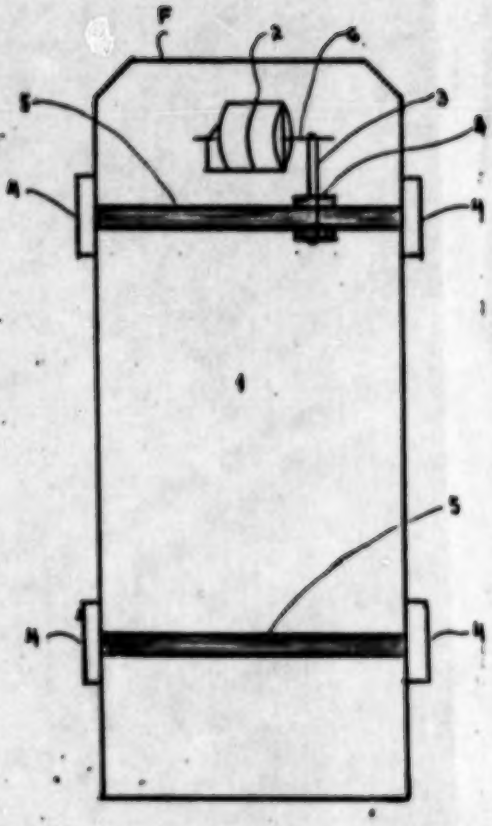


FIG. 2

INVENTOR

Kathman Gullstedt

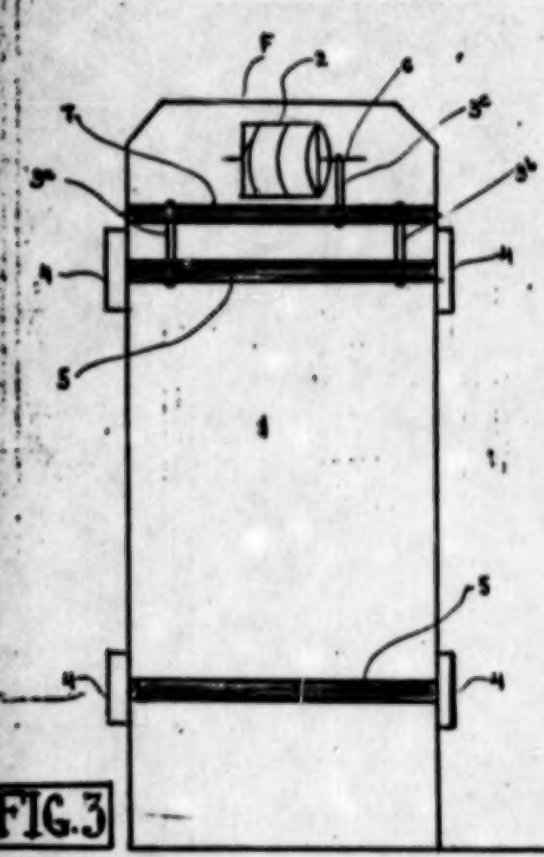


FIG.3

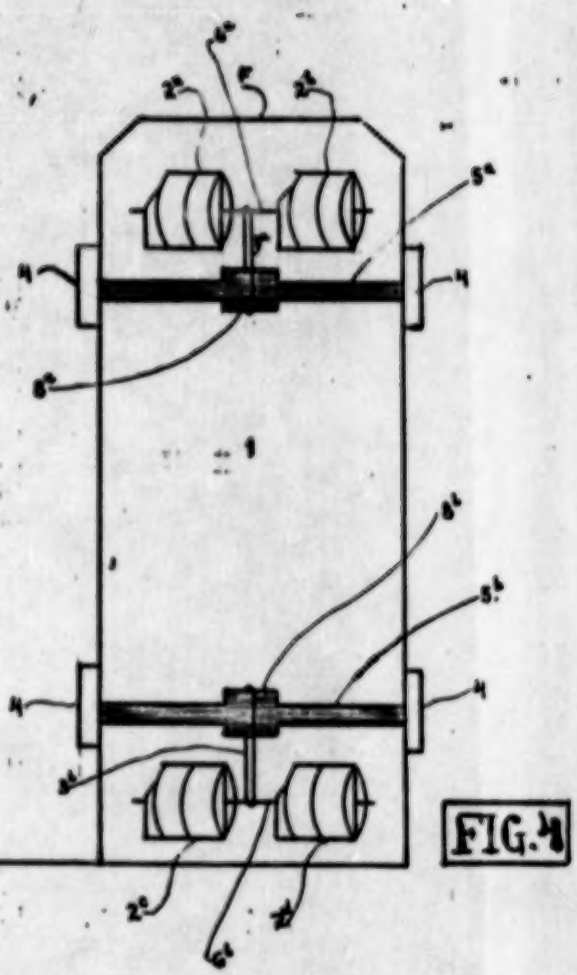


FIG.4

INVENTOR

Hardman Shellard

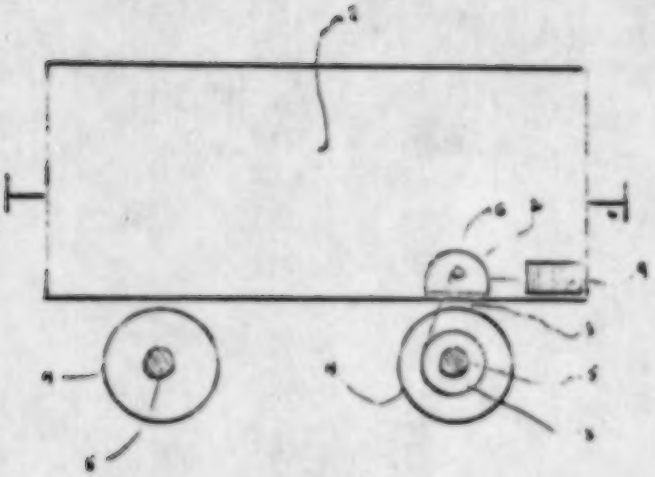


FIG. 5.

INVENTOR

Eastman Kinball

(17)

MAILED

OCT 14 1981

PAT. & T. M. OFFICE
BOARD OF APPEALS

Art Unit 316 Paper No. 22.

Appeal No. 486-64 CEL

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF APPEALS

Ex parte Nachman Stulbach

- - -

Application for Patent filed November 15, 1979, Serial No. 95,082. Electrical Cars.

Nachman Stulbach pro se.

Before Mattern and Messenheimer, Examiners-in-Chief, and Parker, Acting Examiner-in-Chief.

Mattern, Examiner-in-Chief.

This is an appeal from the final rejection of claims 5 through 11, which are all of the claims present in this application.

Claim 5 is considered to be illustrative and it reads as follows:

5. A vehicle having an electro-generating assembly, said assembly comprising a dynamoelectric generator, and coupling means for coupling the drive shaft of said dynamoelectric generator to the axle of the road wheels of said vehicle so that said dynamo electric generator is driven by the rotation of the axle whenever said axle rotates, thereby converting any and all movement of the vehicle into electrical energy.

The references of record relied upon by the examiner are:

Carini	3,477,536	Nov. 11, 1969
Merville (British Patent Specification)	514,351	1938

The appellant's disclosure is directed to electric cars. An enlargement of the vehicle's wheel axle is provided at the point of coupling to an electric generator in order to provide an amplified rate of rotation of the generator and the maximum possible production of electric power.

Claims 5, 6, 9 and 10 stand rejected under 35 U.S.C. 102 as being anticipated by Merville.

Claims 7 and 8 stand rejected under 35 U.S.C. 103 as being unpatentable over Merville in view of Carini. The examiner states:

> "It is deemed to be obvious to a person skilled in the art to couple the generators 8 of Merville directly to the rear drive axle 5 by means of the belt 46 of Carini with the axle shaft of Merville formed with the enlarged portion 44 of Carini and with the shaft of the generator 8 of Merville formed with smaller diameter pulley 40 of Carini whereby the generator shaft is of smaller diameter than the axle shaft so that the rate of rotation of the generator shaft is greater than the rate of rotation of the axle."

Claim 11 stands rejected under 35 U.S.C. 103 as being unpatentable over Merville. The examiner concludes that to eliminate the storage batteries 7 of Merville whereby the generator 8 is directly connected to the motor 2 would have been a mechanical expedient such as an elimination of a part and its function, and would have been obvious to a person skilled in the art.

Claim 11 also stands rejected under 35 U.S.C. 101 as lacking utility. The examiner states:

> "As this claim stands, it implies that the motion of the vehicle is the only means to supply power to drive the vehicle and since it requires outside power to start the vehicle, this claim appears to be drawn to a device incapable of any possible utility."

Regarding claims 5, 6, 9 and 10, the appellant urges that Merville does not anticipate these claims. In particular, the appellant points to the claims in Merville. However, the

pertinence of a reference is based on its total disclosure, rather than on what is being claimed by the patentee. Merville does disclose a vehicle having an electro-generating assembly comprising a dynamoelectric generator and coupling means for coupling the drive shaft of the dynamoelectric generator to the axle of the road wheels of the vehicle so that the dynamo-electric generator is driven by the rotation of the axle whenever the axle rotates (page 2, line 7). Since the appellant merely broadly discloses dynamoelectric generators and sets forth no particular structure for his dynamoelectric generators, the broadly disclosed dynamos in Merville will convert any and all movement of the vehicle into electrical energy to the same extent that appellant's device will. It appears to us that all of the structure recited in claims 5, 6, 9 and 10 is disclosed in Merville and that this structure will perform in the same manner as the claimed structure. Therefore, we sustain the rejection of claims 5, 6, 9 and 10.

As to claim 11, the appellant notes that there is no evidence in any of Merville's three claims of a direct generator-motor assembly, since he claims exclusively the recharging of the electric accumulators in all of his claims. However, it is not necessary that references actually suggest expressly, or in so many words, the changes or possible improvements the appellant has made. In re Sheckler, 58 CCPA 936, 438 F.2d 999, 168 USPQ 716 (1971). We agree with the examiner that it would have been obvious to one of ordinary skill in the art to eliminate the storage batteries and their function. Thus, we affirm the rejection of claim 11 under 35 U.S.C. 103. However, it appears to us that claim 11 does comply with 35 U.S.C. 101 and we, therefore, do not sustain the rejection of this claim on this ground.

Regarding claims 7 and 8, the appellant submits that the patent of Carini and its claims deal with the driving motors and parts associated with the motors of the vehicle as opposed to the instant application which deals with the parts and means of the power generating system only and not at all with the power consuming part of the vehicle, which conerns Carini. The appellant also urges that all pulleys in Carini are coupled to the driving motors. However, we note that the prime movers 10, 12 and 14 in Carini consist of direct current motor-generator units. These units are provided with a shaft pulley 40, 42 connected to an enlarged portion of the rear axle by a belt 46, 48, 50. It appears to us that, since Carini discloses a belt between a small pulley on the generator unit and an enlarged portion of the rear axle, it teaches the use of a turn amplifier. 35 U.S.C. 103 requires the presumption that an inventor would have the ability to select and utilize knowledge from other arts reasonably pertinent to his particular problem. In re Antle, 58 CCPA 1382, 444 F.2d 1168, 170 USPQ 285 (1971). Carini is reasonably pertinent to appellant's problem. While we are not unmindful of the appellant's remarks, we find the rejection of claims 7 and 8 to be proper.

In summary, after careful consideration of the appellant's arguments, we sustain the rejection of claims 5, 6, 9 and 10 under 35 U.S.C. 102 and the rejection of claims 7, 8 and 11 under 35 U.S.C. 103, but we reverse the rejection of claim 11 under 35 U.S.C. 101.

The decision of the examiner is affirmed.

AFFIRMED

Fred C. Matthews
Examiner-in-Chief

A D Messenheimer
Examiner-in-Chief

Examiner-in-Chief
(Acting)

BOARD OF APPEALS

Nachman Stulbach
1740 Ocean Ave.
Brooklyn, N.Y. 11230

(21)

BEFORE THE U.S. COURT OF CUSTOMS AND PATENT APPEALS
IN WASHINGTON, D.C.

Patent Application filed November 15, 1979
Serial No. 95,082
Board of Appeals No. 486-64 of Oct. 14, 1981

Appellant: Nachman Stulbach, pro se

Dear Sir:

The undersigned appellant, Nachman Stulbach, who filed a Notice of Appeal in the U.S. Patent and Trademark Office that he is submitting a petition of appeals to the U.S. Court of Customs and Patent Appeals in Washington, submits herewith this

PETITION OF APPEALS

and prays that the case of his application, Serial No. 95,082 be reviewed and the decision No. 486-64 of the Board of Appeals be reversed for reasons specified in the hereto annexed "Reasons of Appeal" pages 1 - 6 .

The undersigned appellant wishes also to inform that a full set of Certified Transcripts of Record was ordered from the U.S. Patent Office to be transmitted to the Court of Customs and Patent Appeals.

This petition is mailed in triplicate and enclosed herewith is the Certificate of Service. The filing fee has reached the U.S. Court of Customs in the appellant's previous mail of December 1, 1981.

Respectfully submitted

Nachman Stulbach, Appellant, pro se

N. Stulbach
1740 Ocean Avenue
Brooklyn, N.Y. 11230

CERT. 761181

(22)

Application
Serial No. 95,082
Filed 11.15.79
For Electrical Cars
Board of Appeal No. 486-64
Applicant: Hechman Stulbach, pro se

REASONS OF APPEAL

Regarding claims 7 and 8, which are rejected under 35 U.S.C. 103 "over Merville in view of Carini" the reasons of appeal are:

In the decision of the Board of Appeals of 10.14.1981, page 4, the chief examiners submit that "since Carini discloses a belt between a small pulley of the generator unit and an enlarged portion of the rear axle, it teaches the use of a turn amplifier".

It must be noted that the examiners have based their rejection merely on the sight of completely unrelated pulleys and belt in Carini, which even rotate in the opposite direction when compared to the Turn Amplifier. They have not taken in consideration the kind of functions, principles, systems or objectives in either of both structures and have acted as if for instance just the sight of wheels in a clock might entitle them to reject a legitimate claim in a patentable machine. The examiners would mention only that Carini discloses a belt between pulleys and were unable to touch upon any of the attributes and proprieties present in both structures because NONE of them in Carini is pertinent to the appellant's Turn Amplifier.

It should also be noted that the concept "enlarged portion of the axle", used vaguely by the examiners in the above cited quotation in lieu of the pulley member 44, is not an enlarged portion of the axle, in fact, it is not an enlarged portion of anything in Carini, but it is an independent part or member, as its name goes in Carini, which is secured to the end of the axle and is as such in diametrical opposition to the Turn Amplifier, which comprises "annual means concentrically formed about the axle", as can be seen from the contents of claim 7, and in the

appellant's drawings FIGURES 2 and 4.

Also, the examiners' reference in their statement above to a "REAR AXLE" appears to be unfounded, since no rear axle at all can there be located in the patent of Carini.

To teach a turn amplifier it can not be enough merely to use a belt or any other part in Carini, as mentioned above. The following analysis is therefore to show how everything in Carini differs and disperses from the Turn Amplifier and thus can there by no means an allegation that Carini may teach a turn amplifier be justified.

The basic differences between those two structures are:

a) Neither the objectives nor the function and system in Carini call for any particular sizes of his pulleys, as opposed to the appellant's Turn Amplifier in which the sizes of the axle and generator shaft diameters are of paramount importance.

b) The basic physical principle in the appellant's Turn Amplifier is the decrease of the mechanical torque by transmitting it from a larger diameter cylinder (vehicle axle) to a smaller diameter cylinder (generator shaft), and since the decrease of torque is accompanied by the increase of velocity, an Actual Velocity Advantage, AVA, is achieved, which equals the ratio between the radius of the torque transmitting axle (R) and that of the torque receiving generator shaft (r) what is the same as the ratio of the diameter of the vehicle axle (D) and that of the generator shaft (d).

In equation form, $AVA = \frac{R}{r} = \frac{D}{d}$

and it is then the object of the appellant's Turn Amplifier to augment the D of the vehicle axle and to reduce the d of the generator shaft, as much as possible, in order to achieve the highest possible AVA or gain in the performance of his generators.

It must be noted that there is no part in Carini which would apply the above physical principle, neither is there any other similarity in those two systems, one of wheel balancing through the increase of mass on the road wheel, in Carini, and the other of generator velocity acceleration, in the appellant's Turn Amplifier.

c) The main objective in Carini is the reduction of the power required to maintain rotation, Col. 3, Lines 48-57, as diagonally opposed to the Turn Amplifier in which the objective is the increase of electric power production.

d) There is a basic difference in the directions of rotation in the two structures. The Turn Amplifier rotates from the larger diameter axle towards the smaller diameter generator shaft, whereas in Carini the rotation begins from the smaller pulleys, Col.3, Lines 35-37. Can this teach a turn amplifier ?

e) The object in Carini is to achieve a fly wheel effect by means of the increased mass of the prime movers which are placed on the periphery of the road wheel, Col.1, Line 72 to Col. 2, Lines 1-5, what is entirely different from the Turn Amplifier's object of speed amplification through the increase of AVA the actual velocity advantage, as shown under b) above.

f) Even the external appearance of Carini's "merry go round" structure, as can be seen from his drawing Fig.1, and Col. 3, Lines 41-43, is strange to that of the Turn Amplifier, which presents a straight and short line axle-generator connection.

The examiners have been unable to locate any reference pertinent to the claims 7 and 8, and their allegation that Carini teaches the use of a turn amplifier is also completely unwarranted.

Regarding claims 5,6,9 and 10, which are rejected under 35 USC 102 as being anticipated by Merville the reasons of appeal are:

In the decision of the Board of Appeals of 10.14.1981, page 3, the examiners submit that, since the appellant merely discloses dynamo electric generators and sets forth no particular structure for his dynamo electric generators, the Merville dynamos will perform to the same extent as the appellant's generators will.

With all the respect to the examiners, however, it must be noted and underscored that a) there is a special structure in the appellant's AMPLIFIED dynamo electric generators, and b) also contrary to the exminers' statement, the regular old-type dynamos of Merville which are of no particular structure are by no means capable to perform to the extent as the appellant's AMPLIFIED dynamos do. In accordance with the appellant's disclosure and claim 8, which claims the new structure of his generatorn, said generators are formed with reduced diameter shafts and are as such capable to generate manifold quantities of electricity, rendering thereby his electric vehicle self-sufficiency in its electric power requirements for continuous driving without the utilisation of storage batteries, whereas the performance of the Merville generator is restricted to a supplementary supply of a limited amount of elecricity only to recharge his storage batteries, which are basically charged with electric power produced outside his vehicle, and only supplemented by the performance of his generator, as can be seen from Mervilles specification page 1, Lines 64-69.

The examiners have also overlooked the direct and immediate conjunction and effect of the appellant's reduced shaft generators (d) with the Turn Amplifier, which through its augmented axle diameter (D) amplifies even more the yield of his generators,

in addition to their own electric power production amplifying achievement.

In summary, the special structure of Actual Velocity Advantage AVA, as described above, and the enormous and unprecedented yield of the appellant's generators do render his electric car the potential to claim what claims 9,6,9 and 10 do. The new structure of amplification and extent in performance of the appellant's generators are therefore by no means anticipated by Merville, whose disclosure is confined to the old-type generator and its limited performance of hardly supplemental recharging of his storage batteries.

Regarding claim 11, which is rejected under 35 USC 103, "over Merville", the reasons of appeal are:

In his answer of 7.28.1981, page 4, the examiner submits that "to eliminate the storage batteries of Merville whereby the generator is directly connected to the motor would be a mechanical expedient such as an elimination of a part and its function to a person skilled in the art".

Claim 11, which presents an electric vehicle having a batteryless driving system, is rejected by the examiner "over Merville" in the time when Merville has no such system at all, but instead he discloses a battery-energized vehicle and the recharging of its batteries.

The examiners were unable to locate any reference pertinent to the batteryless electric vehicle presented in claim 11 and they suggest that the elimination of the entire battery system in Merville can be compared, please note, to an elimination of " a part and its function ", which is vague and undefined, and the utilization of it as the sole reason for theirb rejection is completely unfounded.

It should also be noted that an elimination of the battery system from Merville, as suggested by the examiner in order to make his vehicle "batteryless" and thus comparable to the vehicle of claim 11, is of no value at all since the vehicle of Merville can never be capable to generate a full supply of electrical power required for continuous batteryless driving. As it has already been shown on page 4 of this petition, the structure and performance extent in Merville are confined to his old-type generator and limited supplemental recharging of his batteries, which are basically charged with electricity from outside of his vehicle, as opposed to the appellant's electric vehicle with its amplified generating system and potential to render it self-sufficiency in its electrical power requirements.

The examiners' suggestion to eliminate the batteries from Merville and the comparison to a port is therefore utterly pointless and their rejection of claim 11 "over Merville" unfounded.

Nachman Stulbach

Appellant, pro se

N. Stulbach
1740 Ocean Avenue
Brooklyn, New York
11230

Note: This opinion will not be published in a printed volume because it does not add significantly to the body of law and is not of widespread legal interest. It is a public record. It is not citable as precedent. The decision will appear in tables published periodically.

UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

IN RE NACHMAN STULBACH	) Appeal No.	82-536.
	)	
	)	
	)	
	) Serial No.	95,082.

Decided: May 13, 1982

Before MARKEY, Chief Judge, RICH, BALDWIN, MILLER, and NIES, Associate Judges.

PER CURIAM.

DECISION

The decision of the Patent and Trademark Office Board of Appeals (board) sustaining the rejection of claims 5, 6, 9, and 10 under 35 USC 102 and the rejection of claims 7, 8, and 11 under 35 USC 103 is affirmed.

OPINION

We agree with the board that Merville discloses an electric vehicle incorporating each of the elements of the vehicle recited in appealed claims 5, 6, 9, and 10. Appellant cannot rely on an alleged "Actual Velocity Advantage factor," introduced by a "turn amplifier," to avoid anticipation under §102, because claims 5, 6, 9, and 10 contain no reference to such "amplifier" means.

We are inclined to appellant's view that one of ordinary skill would have been hard-pressed to extract a "turn amplifier" from Carini. Nevertheless, as the solicitor has noted, Merville's specification includes a diagram showing a gear ("pinion 9"), keyed directly onto the drive shaft of an electric vehicle, driving a second, smaller-diameter gear ("pinion 10") which, in turn, is keyed to the shaft of an electric generator. Merville also states that the generator may be driven by "any rotating part of the vehicle, for example, the axle shaft." In light of these teachings, it would have been obvious to couple annular means concentrically formed about the axle of an electric vehicle to a generator shaft of lesser diameter, thereby assuring that the shaft's rotation rate would be greater than that of the axle. Accordingly, we can find no error in the board's sustaining the rejection of claims 7 and 8 under §103 over Merville in view of Carini.

We also concur with the board's decision to sustain the rejection of claim 11 under §103 as unpatentable over Merville. The elimination of storage batteries from the circuit connecting the generator and the motor would have been an expedient born of a design choice (that is, to energize the motor via current directly from the generator) within the skill of the art.

Note: This opinion will not be published in a printed volume because it does not add significantly to the body of law and is not of widespread legal interest. It is a public record. It is not citable as precedent. The decision will appear in tables published periodically.

UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

IN RE NACHMAN STULBACH	Appeal No.	82-536.
	Serial No.	095,082.

MILLER, Judge, dissenting in part.

I would reverse the rejection of claim 11. No cited reference even remotely suggests that the generator could be directly connected to the motor. Indeed, it appears improbable that appellant's vehicle could be completely powered as a result of its own motion.*/

*/ I note that the board, without stating its reasons, did not sustain the examiner's rejection of claim 11 under 35 USC 101.

UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

Thursday, May 13, 1982

Before: Markey, Chief Judge, Rich, Baldwin, Miller and Nies, Associate Judges.

DECISION WITHOUT PUBLISHED OPINION

No. 82-536. IN RE NACHMAN STULBACH. The decision of the Board of Appeals sustaining the rejection of the claims in appellant's application directed to an electro-generating assembly, is affirmed. Opinion per curiam. Separate opinion by Judge Miller, dissenting in part.

May 13, 1982

BEFORE THE U.S. COURT OF CUSTOMS AND PATENT APPEALS
IN WASHINGTON, D.C.

IN RE NACHMAN STULBACH

Appeal No. 82-536

Serial No. 95,082

HONORABLE COURT OF CUSTOMS AND PATENT APPEALS

Dear Sir:

In reply to the Decision and Opinion of the Hon. Judges of May 13, 1982, the appellant is filing herewith the following

PETITION FOR REHEARING

which in accordance with Rule 6.1 of the Court shall be limited to and state points of law or fact which the petitioner believes the court has overlooked or misapprehended and shall not argue points already considered by the court.

In regard to claims 5,6,9 and 10.

To the opinion of the hon. Judges that the appellant can not rely on an "alleged" Actual Velocity Advantage factor introduced by a turn amplifier to avoid anticipation under 102 " because claims 5,6,9 and 10 contain no reference to such amplifier means ", the appellant is compelled to state that in

the above expressed opinion the Judges have overlooked the following facts:

1. that the appellant's Actual Velocity Advantage is not an "alleged" factor but a scientifically proved fact and undeniable source of electro-productivity enhancement, as shown in the appellant's appeal, page 2, point b.

2. that the appellant's amplification means are unquestionably claimed in claim 7, and there was no need to repeat and add the same feature to the claims 5,6,9 and 10 again.

Claim 7 depends directly from claim 5 and so do claims 6,9 and 10 directly depend from claim 5, as can also be seen from the exact wording of the above mentioned claims. Claim No. 7 claims the Turn Amplifier as part of the entire new electric vehicle serving permanently and unceasingly together in the performance attributed to claims 5,6,9 and 10, and it should not be overlooked that all in the mentioned claims comprised features are an IMPROVEMENT over Merville. There was no necessity to repeat the factor of amplification means in each of the claims 5,6,9 and 10 since each of the claims, including claim 7, depend from and refer to claim 5.

In addition, the feature of the amplification means is extensively described in the disclosure, and it will not be out of place to mention here the similarity of the board's previous procedure to the point in question, namely the board did not sustain the examiner's rejection of claim 11 under USC 101 because of the lack of the feature of initial power in the claim 11, indicating thereby that the feature in question does not have to be repeated in the claim once itwas already described in the disclosure.

In regard to claims 7 and 8.

The appellant's claim that the Carini reference, on which the Patent Office has tirelessly and so harshly built the case, is not pertinent to this invention has been finally recognized by the hon. Judges in the comencing lines of page 2 of their opinion.

However, while leaning still on Merville as base as for rejection the hon. Judges state that

> " it would be obvious to couple annular means concentrically formed about the axle of an electric vehicle to a generator shaft of lesser diameter "

Referring to the above statement, the appellant is compelled to bring to the attention of the Court that the hon. Judges have in the moment of their decision failed to realize that the "annular means concentrically formed about the axle of the electric vehicle" is the innovation of the appellant, and how can a part of the appellant's own innovation be utilized by the judges against the appellant himself, as if that part would be one of a cited reference, what is of course not the case especially when the Carini reference is excluded from evidence ?

In regard to claim 11.

The hon. Judges sustained the rejection of claim 11 because, in their opinion, the elimination of the storage batteries from the circuit connecting the generator and the motor is a design choice. This is however not the case, but instead, a dreadful misapprehension. It must be brought to the attention of the Court that the BATTERY-LESS ELECTRIC CAR is not simply a matter of wiring or circuit design, it is instead a vehicle which is capable of driving without the burden of constant battery charging and changing. It is not just the superficial matter of the electrical wiring but a new construction of a new electrical car in which the feature of direct connection of the generator to the motor is not even remotely suggested in any cited reference nor ever thought of in actual production.

In view of the foregoing points overlocked or misapprehended by the judges this petition for rehearing is

Respectfully submitted

Nachman Stulbach, petitioner

N. Stulbach
1740 Ocean Avenue
Brooklyn, N.Y. 11230

CHANGED TO:

N. Stulbach
40 Brighton 1st Road
Brooklyn, New York 11235
(Mail Box Section 11)

(36)

ADDITION FOR PETITION FOR REHEARING

IN RE NACHMAN STULBACH APPEAL NO. 82-536

HONORABLE UNITED STATES COURT
OF CUSTOMS AND PATENT APPEALS
IN WASHINGTON, D.C. 20439.

DEAR SIR:

It is herewith respectfully requested to include the following communication to the third page of the appellant's Petition for Rehearing, filed in the Court on May 24, 1982.

In regard to claims 7 and 8,

The exclusion of the Carini reference recognized by the judges at the start of page 2 of their opinion, stating:

> "We are inclined to appellant's view that one of ordinary skill would have been hard-pressed to extract a "turn amplifier" from Carini."

makes the next statement of the judges (following on the same page of the opinion) and stating:

> "Accordingly, we can find no error in the board's sustaining the rejection of claims 7 and 8 under 103 over Herville in view of Carini."

contradictive to the judges' own opinion in which the Carini reference is recognized as being of no pertinence to the present invention. It is therefore necessary to note that the judges' second statement or decision has been made in error.

This addition to page 3 of the Petition for Rehearing, filed on May 24, 1982 is

Respectfully submitted

Nachman Stulbach, petitioner

N.Stulbach
40 Brighton 1st Road
Brooklyn, N.Y. 11235

Cert. 6868605

UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS
717 MADISON PLACE NW.
WASHINGTON, D.C. 20439

GEORGE E. HUTCHINSON
CLERK

TELEPHONE 633-6950
AREA CODE 202

July 1, 1982

Mr. Nachman Stulbach
1740 Ocean Avenue
Brooklyn, NY 11230

Re: Appeal No. 82-536
In re Stulbach

Dear Mr. Stulbach:

The court denied today the petition for rehearing in the above appeal.

Very truly yours,

George E. Hutchinson

df

cc: Solicitor

PETITION FOR REHEARING

No. 82-536. IN RE NACHMAN STULBACH. The petition for rehearing is denied.

July 1, 1982

UNITED STATES COURT OF CUSTOMS AND PATENT APPEALS

Thursday, July 1, 1982

Before: Markey, Chief Judge, Rich, Baldwin, Miller and Nies, Associate Judges.

DECISIONS WITHOUT PUBLISHED OPINIONS

No. 82-524. IN RE JACOB SPIEGEL AND ALBERT R. MILLER. Opinion by Rich, Judge. The decision of the Board of Appeals sustaining the rejection of all claims in appellants' application directed to a combination of a three-dimensional object and a heat-shrinkable decorative band which is disposed about the object to form an ornament, is affirmed. Concurring opinion by Judge Baldwin, with whom Judge Nies joins.

No. 82-540. JOZEF DRABEK v. THEMISTOCLES DAMASCENO JOAQUIM D'SILVA. Opinion by Baldwin, Judge. The decision of the Board of Patent Interferences awarding priority to appellee D'Silva for an invention directed to carbamic acid-based sulphides, is affirmed. Dissenting opinion by Miller, Judge.

No. 82-567. IN RE HENRY HOYLE SCHWEITZER AND JAMES ROBERT DRAKE. Opinion by Nies, Judge. The decision of the Board of Appeals affirming the rejection of the claims in appellants' reissue application for a wind-propelled apparatus, is affirmed.

ACTION IN PENDING CASES

No. 82-18. THE UNITED STATES, MALCOLM BALDRIDGE, SECRETARY OF COMMERCE, ET AL. v. ASSOCIATED DRY GOODS CORPORATION. This appeal is from an order of the Court of International Trade (Slip Op. 82-1) in which the court below, after this court dismissed for mootness an appeal of its earlier decision in this case (Slip Op. 81-70), refused to vacate said earlier decision in its entirety and to dismiss the action as moot. Appellee moves to dismiss the present appeal, with prejudice, as moot, while appellants opposed the motion and filed a cross-motion for an order vacating certain portions of the opinion below (Slip Op. 81-70) which remain in full force and effect and remanding the case with directions to dismiss.

HELD: Both motions are denied. The judgments in Slip Opinions 81-70 and 82-1 are vacated and the case remanded to the Court of International Trade with directions to dismiss it as moot. Opinion by Rich, Judge.

No. 82-561. JACK G. MAKARI v. GERALD J. MOSSINGHOFF, COMMISSIONER OF PATENTS AND TRADEMARKS. The motion of the Commissioner of Patents and Trademarks to dismiss the Petition for Writ of Mandamus is granted and the Petition is dismissed as moot.

(40)

United States Court of Customs and Patent Appeals

Mandate

No. 82-536

IN RE NACHMAN STULBACH

Serial No. 095,082

ON APPEAL from the Board of Appeals

This CAUSE having been [redacted] *considered, it is*

ORDERED and ADJUDGED: Affirmed

DATED May 13, 1982

Petition for rehearing denied, July 1, 1982.

A TRUE COPY GEORGE E. HUTCHINSON,
TEST:
CLERK, UNITED STATES COURT OF CUSTOMS
AND PATENT APPEALS
ENTERED THIS 9th DAY OF July 1982

/s/ Dorothy I. Myers
Chief Deputy Clerk

7/82.

(41)

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT		ATTORNEY DOCKET NO.
06/095,082	11/15/79	STULBACH	N	000000000000

NACHMAN STULBACH
1740 OCEAN AVENUE
BROOKLYN, NY 11230

EXAMINER	
SMITH,M	
ART UNIT	PAPER NUMBER
316	27

DATE MAILED: 07/29/82

NOTICE OF ABANDONMENT

This application is abandoned in view of:

1. ☐ Applicant's failure to respond to the Office letter, mailed _____.

2. ☐ Applicant's letter of express abandonment which is in compliance with 37 C.F.R. 1.138.

3. ☐ Applicant's failure to timely file the response received _____ within the period set in the Office letter.

4. ☐ Applicant's failure to pay the required issue fee within the statutory period of 3 months from the mailing date of _____ of the Notice of Allowance.

   ☐ The issue fee was received on _____.

   ☐ The issue fee has not been received in Allowed Files Branch as of _____.

   In accordance with 35 U.S.C. 151, and under the provisions of 37 C.F.R. 1.316(b), applicant(s) may petition the Commissioner to accept the delayed payment of the issue fee if the delay in payment was unavoidable. The petition must be accompanied by the issue fee, unless it has been previously submitted, the petition fee of $15, and a verified showing as to the causes of the delay.

   If applicant(s) never received the Notice of Allowance, a petition for a new Notice of Allowance and withdrawal of the holding of abandonment may be appropriate in view of Delgar Inc., V. Schuyler, 172 U.S.P.Q. 513.

5. ☑ The reason(s) below.

CCPA Decision dated May 13, 1982 affirming the rejection of claims 5-11, all of the claims in this application.

M.L.Smith:jc
(703)557-3204
07/21/82

Joseph F. Peters, Jr.
Supr. Prim. Examiner
Art Unit 316

7/21/82

PTOL-1432

(42)

Nachman Stulbach
1740 Ocean Avenue
Brooklyn, New York
11230

August 4, 1982

Mr. Joseph F. Peters, Jr.
Supr. Prim. Examiner
US Patent and Trademark Office
Washington, D.C. 20231

Ser.No. 06/095,082
Filing 11.15.1979
Applicant: N.Stulbach
Art Unit 316
Examiner M.Smith

In Re: Unlawful abandoment notice

You have hastened to inform me (copy of your Notice of Abandoment is enclosed) that the above cited application is considered by you abandoned.

This letter is however to inform you that the given in your above mentioned Notice date May 13, 1982 is far not the date in which the processing of my application can be considered as expired. Namely on May 24, 1982, as you know, the appellant has filed in the Court of Customs and Potent Appeals his Petition for Rehearing, which was denied by the court on July 1st 1982, and the copy of the Mandate was mailed to me under the envelope of the Patent Office after July 9th 1982.

It is therefore urgently requested to withdraw the notice of abandoment, which you have issued, for reasons yet unknown to the applicant, on July 21, 1982, prematurely.

Sincerely

Nachman Stulbach, applicant, per se

P.S.
The applicant has still
90 days time to appeal the Mandate,
I am sure you aware of.

Certified P27-2829415

MAILED

AUG 19 1982

DIRECTOR'S OFFICE
GROUP 310

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

Ex parte: Nachman Stulbach
Serial No: 095,082
Filed: November 15, 1979
For: ELECTRICAL CARS

LETTER RE NOTICE OF ABANDONMENT

When all of the claims in an application stand rejected, proceedings on the application are considered terminated on the date of receipt of the Court of Customs and Patent Appeals' certificate and the application is not open to subsequent amendment and prosecution by the applicant since the application is no longer considered pending. The certificate from the Court was received by the Patent and Trademark Office on July 12, 1982. Accordingly, the instant application is considered abandoned as of said date. Applicant's attention is directed to Continental Can Company, Inc. v. Schuyler, 168 USPQ 625 (copy enclosed).

J. F. Peters, Jr.
Supervisory Patent Examiner
Art Unit 316

Nachman Stulbach
1740 Ocean Avenue
Brooklyn, NY 11230

Enclosure:
168 USPQ 625

District Court, District of Columbia

CONTINENTAL CAN COMPANY, INC., et al.
v. SCHUYLER, COMR. PATS.
No. 3107-67 Decided May 14, 1970

PATENTS

1. Abandonment — Application (110.3)

Supreme Court (164.)

Where rejection of all claims is affirmed by Court of Customs and Patent Appeals, responsibility is upon applicant to stay court's judgment, if pendency of application is to be preserved, even though that is not necessary for Supreme Court review; court rejects contention that application should not be considered abandoned until after expiration of 90 day period for Supreme Court review; jurisdiction of Supreme Court to grant writ of certiorari is not defeated by fact that mandate of Court of Customs and Patent Appeals is not stayed or by fact that Patent Office terminated application upon receipt of mandate

---

Action by Continental Can Company, Inc., and Fred P. Winslow to compel William E. Schuyler, Jr., Commissioner of Patents to grant a filing date to a patent application as a continuation of Serial No. 48,668. Complaint dismissed.

See also 151 USPQ 48.

CHARLES J. DILLER and DILLER, BROWN, RAMIK & HOLT, both of Washington, D. C., for plaintiffs.

S. WM. COCHRAN (JERE W. SEARS of counsel) for defendant.

McGUIRE, District Judge.

The bald issue in this case seems to be whether or not plaintiffs' parent application [Serial No. 48,668] was pending when its "streamlined" continuation application was filed February 8, 1967.

Plaintiffs contend that such was the situation, and allege that the Commissioner of Patents cannot take away a right which is protected by statute, and certainly not inhibit or usurp the power given to the Supreme Court under Section 1256 of Title 28, saying that they (T.B. p. 4)

"have a right under Title 28 to petition for a writ of certiorari to the Supreme Court within the 90 day period and the Commissioner is powerless and lacking authority to hold an application abandoned within this time period without contravening petitioners' substantive rights."

[1] In other words, their contention is that the parent application, so-called, should not have been considered abandoned until after the 90 day period for appeal to the Supreme Court had expired. The Court disagrees. For the answer to this suggestion is that the application was no longer viable. And neither the issuance of its Certificate by the CCPA nor the termination of proceedings upon receipt of same by the Patent Office would operate to preclude the High Court's judgment on a writ of certiorari.

The Court agrees with the Patent Office that where rejection of all claims is affirmed by the Court of Customs and Patent Appeals, as in this case, the responsibility is upon the plaintiff to stay the Court's judgment if the pendency of the application is to be preserved, even though that is not necessary for Supreme Court review.

The jurisdiction of the Supreme Court in the circumstances to review the action of the Court of Customs and Patent Appeals on a writ of certiorari is not defeated by the fact that the Court's mandate was not stayed but has issued. See Carr v. Zaja, 283 U.S. 52, 53 (1931) and The Conqueror, 166 U.S. 110, 113 (1897). See also, generally, United States v. Eisner, 323 F.2d 28, 42 (1963) (although this is a criminal case the point is the same) in which it is categorically stated that the issuance of the mandate would not bar a petition for certiorari to the Supreme Court, citing Carr and The Conqueror referred to above.

Complaint dismissed. This memorandum may also serve as an order effecting same.

APPLICATION VOID.

This print shows the Specification as it became open to public inspection under Section 91 (4) (a) of the Patents and Designs Acts, 1907 to 1932.

PATENT SPECIFICATION

Convention Date (France): Jan. 30, 1937.

514351

Application Date (in United Kingdom): Jan. 22, 1938. No. 2179/38.

Specification not Accepted

LIBRARY
JAN 5 - 1940
U. S. PATENT OFFICE

COMPLETE SPECIFICATION

Apparatus for Recharging Electric Traction Accumulators

I, Louis Raphael Merville, of 6, rue du Chalet Asnieres, Seine, France, a French Citizen, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to motor vehicles drawn by electric traction.

In motor vehicles the electric traction is effected by electric accumulators supplying current to the traction motor or motors. These accumulators have a limited capacity only permitting a limited run (about 30 to 40 kilometres) after which it is necessary to recharge the accumulators by means of the electric current of the local supply circuit which takes up time according to the load of the accumulators. It is therefore desirable to make the charge or the accumulators last as long as possible and it is this problem which the invention has solved.

For this purpose the present invention is characterised by the fact that it consists in one or more dynamos driven by the vehicle when this runs at a certain speed, recharging the accumulator by using the momentum of the vehicle.

According to one particular method of carrying the invention into effect, the drive of the dynamos is effected from the transmission shaft of the motor at the rear axle or at the front axle so as to reduce to a minimum friction and resistance in the transmission for driving the vehicle.

Other advantages and characteristics of the invention appear from the following description of one form of carrying the same into effect given by way of example, with reference to the annexed drawing which shows very diagrammatically one method of carrying the invention into effect; only those parts necessary for understanding the invention being shown.

By way of an example of carrying out the invention the case of a small light vehicle has been taken in which the chassis 1 carries an electric motor 2 disposed in the usual position for the internal combustion engine and driving the rear wheels 3 without the intermediary of a gear box.

The motor 2 is fed by one or more accumulator batteries 7.

In accordance with the present invention two dynamos 8 are provided on the vehicle, which are driven by a rotating member of the vehicle, in the actual case, the shaft 4 by means of a pinion 9 keyed on this shaft and driving pinions 10 keyed to the shafts of the dynamos 8 by the intermediary of a chain 11. The dynamos 8 recharge the accumulator battery or batteries 7. Consequently the vehicle by means of its momentum recharges the battery or batteries which ensures a recovery of electricity which increases perceptibly the duration of the run of the vehicle.

In order to reduce to a minimum losses from friction or other causes in the driving transmission of the dynamos 8, the driving member, pinion 9 in the particular instance given, is keyed directly on to the shaft 4, without the provision of an intermediary countershaft.

In the example given two dynamos 8 are provided to charge the battery or batteries. It is quite obvious that it is possible to have only one of these dynamos or, on the contrary that a greater number may be provided.

Naturally if the vehicle is provided with a connecting gear it is disposed between the motor 2 and the pinion 9.

It is to be understood on the other hand that the invention is not limited to the particular case shown of a vehicle having a single motor disposed at the front and that it applies quite as well to the case where instead of one motor, several motors are provided disposed in different places

[Price 1/-]

and that the invention is equally applicable if the vehicle is front driven, rear driven or driven by four wheels etc. In case of the vehicle not having a central transmission shaft 4 the drive of the dynamos may be from any rotating part of the vehicle, for example, an axle shaft. In the same way this transmission is not necessarily as shewn a chain transmission, it may be a belt transmision by gearing by discs etc.

In general it is understood that the present invention is only shewn here by way of explanation and not by way of limitation and that modifications in detail may be introduced without changing its spirit.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Apparatus for recharging electric traction accumulators comprising in combination a battery of accumulators for the initial drive of the electric motor, a longitudinal transmission between the motor and the rear axle and dynamos connected to the said transmission so as to produce a recharging current by means of the momentum of the vehicle.

2. Apparatus for recharging electric traction accumulators comprising in combination a battery of accumulators for the initial drive of the electric motor, dynamos connected to the accumulators so as to recharge the same by means of the momentum of the vehicle, a longitudinal transmission to drive the vehicle and a lateral transmission running from the main transmission to pinions connected to the dynamos so as to drive the same symmetrically and directly without loss of power.

3. Apparatus for recharging electric traction accumulators substantially as herein described with reference to the accompanying drawing.

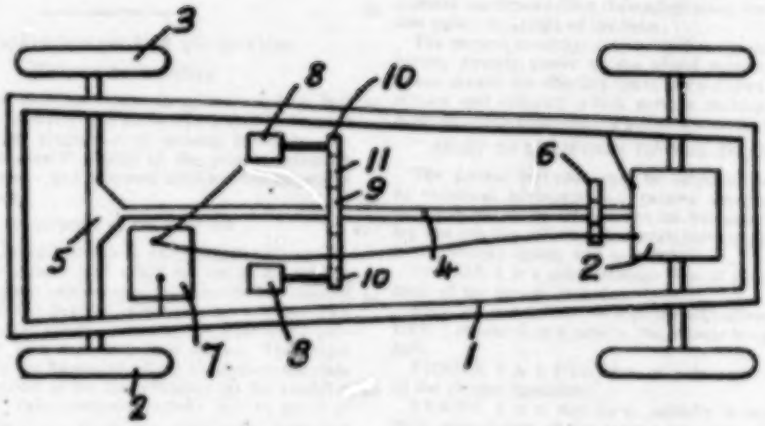
Dated this 22nd day of January, 1938.

L. R. MERVILLE,
By Eric Potter & Clarkson,
Chartered Patent Agents,
3, Staple Inn, London, W.C.1,
and at Nottingham.

Leamington Spa: Printed for His Majesty's Stationery Office, by the Courier Press.—1939.

514,351 COMPLETE SPECIFICATION 1 SHEET

180-65.1/D



Malby & Sons, Photo-Lith

United States Patent Office 3,477,536 Patented Nov. 11, 1969

3,477,536

ELECTRIC DRIVE SYSTEM

Eugene F. Cucini, Andover, Conn., assignor to Energy Systems, Inc., Andover, Conn., a corporation of Connecticut

Filed Sept. 21, 1967, Ser. No. 669,536
Int. Cl. B60k 1/00; F16h 37/00; H02k 7/00
U.S. Cl. 180—65 4 Claims

ABSTRACT OF THE DISCLOSURE

An electric drive system wherein each driven member comprises an integral unit including a plurality of electric motors, suitable torque transmitting means and means for delivering electric power to the motors. The electric motors are rigidly mounted adjacent the periphery of the driven member and are coupled to the axle about which the member rotates by the torque transmitting means, the motors thus rotating with the member.

BACKGROUND OF THE INVENTION

Field of the invention

The present invention relates to an electric drive system. More particularly, the present invention is directed to the electrical propulsion of rotating members. Accordingly, the general objects of the present invention are to provide new and improved methods and apparatus of such character.

Description of the prior art

While not limited thereto in its utility, the present invention is particularly well suited for use in the driving of vehicles. Recent concern over air pollution has resulted in renewed interest in electrically propelled vehicles. Past as well as present efforts to develop an electrically propelled vehicle have met with little success. The major problem which has hampered efforts to advance the state of the art consists of the low efficiency of the available drive systems. This problem manifests itself in terms of a limited operating range for electrically propelled vehicles.

The power source for an electrically propelled vehicle of the type which is independent of rails or overhead conductors must of necessity be a device for converting chemical energy to electrical energy. While such a conversion device could be a fuel cell, efforts to date have been directed towards use of banks of wet cell-type batteries as power sources for such vehicles. Current may be drawn from a bank of batteries for but a limited period of time before recharging of the batteries becomes necessary. In order to increase this time period and thus to increase the range of the vehicle, the efficiency of the drive system which converts electrical power to torque and delivers the thus generated torque to the drawing wheels must increase.

The prior art electrical drive system typically comprised a stationary hub mounted electric motor which, by means of belts or gearing operatively connected to the motor output shaft, caused the wheel to be driven about the hub or axle. As noted above, such prior art drive system are relatively inefficient and thus draw excessive power from the batteries.

SUMMARY OF THE INVENTION

The present invention overcomes the disadvantages of the prior art by providing an electric drive of improved efficiency. The drive system of the present invention comprises a plurality of electric motor prime movers which are mounted on and rotate with a drive wheel or other rotating member. By affixing plural prime movers about

and adjacent the periphery of a rotating member, the member may be balanced and its rotating mass increased. The increase in mass produces a fly wheel effect which, once the member is set into rotation, results in a reduction of the power necessary to maintain rotation. Similarly, since driving torque is applied to the member about its periphery, power requirements are reduced and, in a vehicular application, the range of the vehicle employing the system is thereby increased.

The output shafts of the plural prime movers of the present invention are coupled to the stationary hub or axle about which the member rotates through a suitable drive system. The drive system may, for example, comprise either a fixed gear which engages gearing coupled to the drive shafts of the motors whereby the motors drive themselves around the fixed gear. Alternatively, the drive system may comprise a fixed position, plural groove pulley which is engaged by V-belts which also contact pulleys coupled to the drive shafts of each of the motors whereby the motors drive themselves about the fixed position pulley by means of the belts.

The present invention also comprises means for transmitting electric power to the plural motors, electrical circuit means for effecting speed control over the plural motors and circuitry which permits recharging of the batteries which comprise the power source for the system.

BRIEF DESCRIPTION OF THE DRAWING

The present invention may be better understood and its numerous advantages will become apparent to those skilled in the art by reference to the accompanying drawing wherein like reference numerals refer to like elements in the various figures and in which:

FIGURE 1 is a side elevation view of a first embodiment of the present invention.

FIGURE 2 is a front view of the embodiment of FIGURE 1 mounted on a vehicle, the vehicle being shown in part.

FIGURE 3 is a front view of a second embodiment of the present invention.

FIGURE 4 is a rear view, partially in section, of a third embodiment of the present invention, the embodiment of FIGURE 4 being especially adapted for a vehicle employing a single drive wheel.

FIGURE 5 is a schematic view of control circuitry which may be employed with the embodiments of FIGURES 1–4.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to FIGURE 1, a first embodiment of the present invention employing three prime movers 10, 12 and 14 is shown. Prime movers 10, 12 and 14 consist of direct current motor-generator units. The prime movers could, however, consist merely of direct current motors. Prime movers 10, 12 and 14 are rigidly mounted to the rim 16 of wheel 17 respectively by means of brackets 18, 20 and 22. As may best be seen from FIGURE 2, the motor-generators 10, 12 and 14 pass through the wheel and thus, in the case of the spoked wheel shown, displace several of the spokes 24. In order to preserve the structural integrity of the wheel and to provide further support for the prime movers, motor-generators 10, 12 and 14 are also supported by respective support struts 26, 28 and 30. The support struts extend from the motor housings to hub 32 which rotates about the vehicle axle 34 on bearings, not shown.

As may be seen from FIGURE 2, the output shafts of the motors of prime movers 10, 12 and 14 are, in the embodiment of FIGURES 1 and 2, of different length. Thus, the output shaft 36 of prime mover 12 is comparatively short, the output shaft, not shown, of prime mover 10 is of intermediate length and output shaft 38 of prime mover

34 is comparatively long. A pulley 40 is keyed or otherwise secured to shaft 36 of prime mover 12, a pulley 42 is similarly secured to output shaft 38 of prime mover 14 and a third pulley, not shown, is secured to the output shaft of prime mover 10.

A pulley member 44 having three grooves therein is secured to axle 34. The grooves in pulley member 44 are respectively aligned with the pulleys affixed to the output shafts of prime movers 10, 12 and 14. Driving connection is made between the motor output shafts and the vehicle axle by means of three V-belts 46, 48 and 50 which respectively pass around pulleys 40, 42 and the pulley on the output shaft of prime mover 10 and the grooves in pulley member 44 which are aligned vertically with said grooves.

Stationary axle 34 is attached at its inner end to a frame member 52 and the vehicle is suspended above frame member 52 by any suitable cushioning means, a pair of springs 54—54 being shown adjacent the drive wheel in FIGURE 2.

Power in the form of current from a battery bank, not shown in FIGURES 1 and 2, is delivered to the motors comprising motor generators 10, 12 and 14 by conventional slip-ring structure, not shown, which is mounted about the exterior or rotating hub 32 on an insulating member. The brushes and brush holders for the slip-ring assembly are suspended from stationary pulley member 44. The output from the generator portions of the three prime movers will, in the usual instance, be alternating current which will be transmitted from the wheel back to the power source, for purposes to be discussed below, by a brush commutator assembly, now shown, which bridges the rotating gap between the hub and axle.

The embodiment of FIGURES 1 and 2 operates as follows: Upon energization of the motors, the output shafts of prime movers 10, 12 and 14 begin to turn thus rotating the pulleys affixed thereto. However, due to the large area of contact between belts 46, 48 and 50 and the grooves in pulley member 44, the rotation of the pulleys on the motor output shafts does not result in slippage of the V-belts. Instead, the motor shaft pulleys, such as pulleys 40 and 42, drive themselves around stationary pulley member 44, the motor shaft pulleys traveling on belts 46, 48 and 50. In one test apparatus, the belts traveled two inches for each complete rotation of the wheel. The travel of the prime movers 10, 12 and 14 about stationary pulley member 44, of course, results in the driving of the wheel about axle 34. Since the wheel is driven adjacent its outer diameter, and further since the mass of the motors is added to that of the wheel and the motors are rigidly mounted adjacent the periphery of the wheel, a fly wheel effect is achieved and, once set into rotation, minimum power is required to keep the wheel in motion. The decrease in the power requirements for maintaining motion reduces the power drain on the electric power source for the drive system, and thus increases the range of the vehicle.

Referring now to FIGURE 5, the electrical circuitry for a preferred embodiment of the present invention is shown schematically. Power for the drive system comprising the present invention preferably comprises a pair of battery banks 60 and 62. Battery banks 60 and 62 may each consist of a plurality of rechargeable batteries which may be connected either in series, parallel or series-parallel depending on the needs of the system. In the embodiment being described, the negative terminals of batteries 60 and 62 are connected to ground while the positive terminals of the batteries are connected, via ganged switches 64 and 66, to opposite sides of a voltage sensitive relay 68. Voltage sensitive relay 68 may be either an electromechanical device which operates the two pair of double pole-double throw contacts 70-72 when the voltage of either battery falls below that of the other by a preset amount. Alternatively, voltage sensitive relay 68 may be a solid state switching network. As shown in FIGURE 5,

ganged switches 64-66 have been closed and current is being delivered to the load via the closed contacts of lower pair of contacts 72 of voltage sensitive relay 68 thus indicating that the voltage across battery 62 has not fallen below the voltage across battery 60 by a preselected percentage of the normal battery output voltage.

With the circuit of FIGURE 5 in the condition shown, current from battery bank 62 is delivered, via switch 66 and the closed pair of contacts 72 of relay 68, to a reverse switch 74 and thence to a speed control 76. Reversing switch 74 controls, in the manner well known in the art, the direction of current flow through the field windings of the prime movers thereby determining the direction of rotation of the motors. Speed control 76 may be any well known device for electrically varying the speed of the motors. If desired or necessary, a control voltage may be tapped off one of the generators and fed back to speed control 76 to automatically maintain a desired speed regardless of changes in load as might be experienced when the vehicle encounters a grade. While only a single motor has been shown connected to speed control 76, it is to be understood that typically the current passed by speed control 76 will be delivered to each of the plurality of motors by means of the commutator arrangement which is interposed between the speed control and motors. Depending upon the requirements of the vehicle, the motors themselves may be either series, shunt or compound type direct current motors and the motors may be connected either in series or parallel across speed control 76.

As shown in FIGURE 5, the generator portions of the prime movers are mechanically connected to and driven by the motor portions thereof. The generators will produce alternating current which will be converted to direct current by means of a rectifier 78. A voltage regulator 80 is connected, via contacts of voltage sensitive relay 68 to the positive terminal of the battery which is not supplying power to the load. This is battery 60 with the circuit in the condition shown in FIGURE 5. Should battery 60 have previously been partially discharged, the contacts of the switch in voltage regulator 80 will be closed and the direct current produced by rectifier 78 will be delivered to battery 60 to thereby cause recharging of the battery.

The switching between batteries 60 and 62 under the control of voltage sensitive relay 68 coupled with the partial regeneration or recharging of the battery which is not delivering current to the load, as achieved through the action of voltage regulator 80, prolongs the life of the batteries and thus permits a vehicle range considerably greater than previously obtainable. Tests have shown that maximum battery life is obtained if relay 68 is set to operate when the voltage of the battery supplying current to the load drops below that of the other battery by not more than 10%. Voltage sensitive relay 68 must, of course, have a built-in time delay so that the relay will not operate at the time of start up of the motors.

For some applications, particularly where the high starting torque of a series wound motor is desired, a belt drive such as shown in FIGURES 1 and 2 has certain disadvantages. Under these conditions, the rim mounted motors may be driven about a stationary gear. Such a system is depicted in FIGURE 3 wherein the motor output shaft pulleys of the embodiment of FIGURES 1 and 2 have been replaced by drive gears 90 and 92 and the stationary pulley member has been replaced by an externally toothed ring gear 94. It is worthy of note that the embodiment of FIGURE 3 employs only a pair of motors 96 and 98 rather than the three motors of the embodiment of FIGURES 1 and 2.

Referring now to FIGURE 4, a drive system particularly well suited for a vehicle having a single drive wheel is shown. The embodiment of FIGURE 4, like that of FIGURE 3, employs a gear rather than belt drive. Unlike the FIGURE 3 embodiment, however, the embodi-

ment of FIGURE 4 employs four drive motors, three of which 100, 102 and 104 are shown. Motors 100, 102 and 104 respectively have gears 106, 108 and 110 affixed to their output shafts. Drive gears 106 and 108 engage an internally toothed ring gear 112 which is attached to the left hand member of the drive wheel support fork 114. Similarly, drive gear 110 engages a stationary, internally toothed ring gear 116 which is affixed to the right hand member of wheel support fork 114. Thus, in the FIGURE 4 embodiment, a pair of motor drives from each side of the wheel and a planetary gear drive system is employed.

While preferred embodiments have been shown and described, various modifications and substitutions may be made without departing from the spirit and scope of the present invention. Accordingly, it is to be understood that the present invention has been described by way of illustration and not limitation.

What is claimed is:

1. A drive system for a land vehicle comprising:

a driven wheel, said wheel being in contact with the terrain over which the vehicle is to travel;

at least three electric motors affixed to said wheel at a plurality of points about and adjacent to the periphery thereof;

stationary axle means about which said wheel rotates, and

means for transmitting torque from said motors to said axle means whereby said wheel and motors rotate about said axle means.

2. The apparatus of claim 1 wherein said torque transmitting means comprises:

a stationary pulley affixed to said axle, said pulley having a number of grooves equal to the number of electric motors;

pulleys affixed to the output shafts of each of said electric motors; and

belts extending from each of said motor shaft pulleys and an associated groove in said stationary pulley.

3. The apparatus of claim 1 wherein said torque transmitting means comprises:

a stationary ring gear with internal teeth affixed to said axle; and

a drive gear affixed to the output shaft of each of said electric motors, said drive gears engaging said stationary gear.

4. An electric drive system for a land vehicle comprising:

a drive wheel of circular cross section, said wheel being in contact with the terrain over which the vehicle is to travel;

at least three electric motors affixed to said drive wheel at a plurality of points about and adjacent to the periphery of said drive wheel;

stationary axle means passing through the center of said drive wheel, said drive wheel being rotatable about said axle means;

a first rechargeable source of electrical power;

a second rechargeable source of electrical power;

voltage sensitive switch means for selectively delivering current from one of said first or second power sources to said motors; and

means for transmitting torque from said motors to said axle means whereby said drive wheel will rotate about said axle means.

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LEO FRIAGLIA, Primary Examiner

M. L. SMITH, Assistant Examiner

U.S. Cl. X.R.

74—665; 310—67, 112

IRC-65.F 46 51 EXAMINER

Nov. 11, 1969 E. P. CARINI 3,477,536
ELECTRIC DRIVE SYSTEM
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FIG. 1

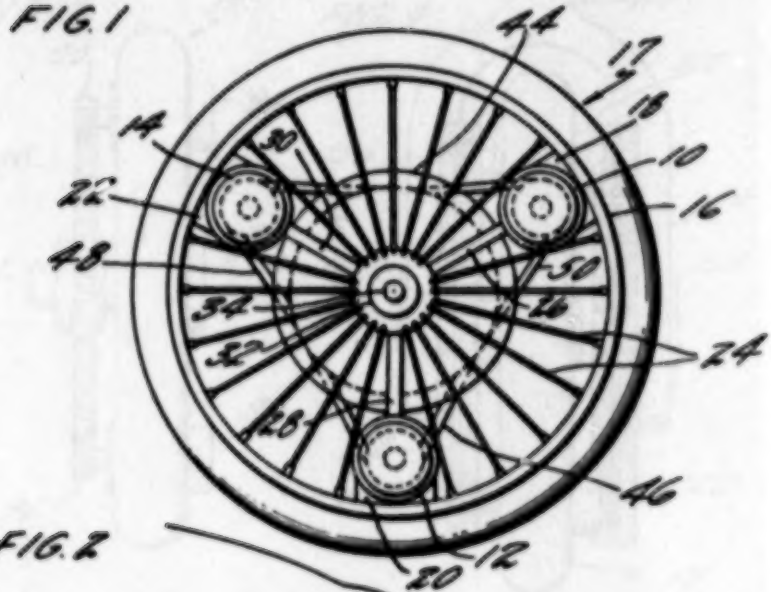
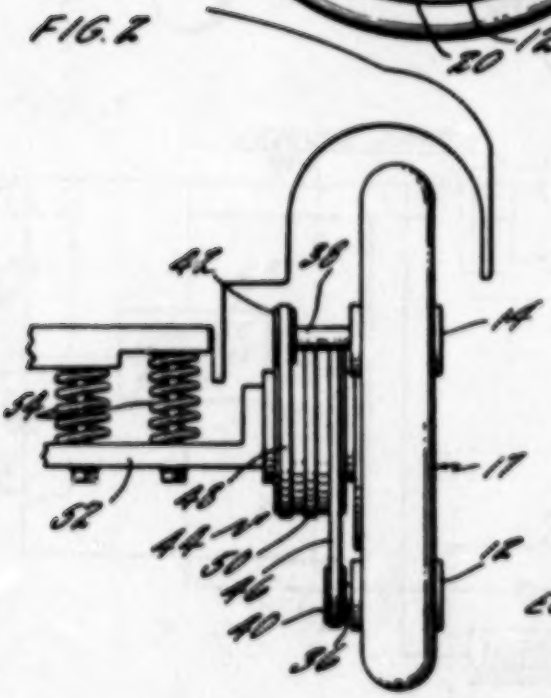


FIG. 2



INVENTOR
EUGENE P. CARINI

Nov. 11, 1969 E. P. CARINI 3,477,536

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FIG. 3

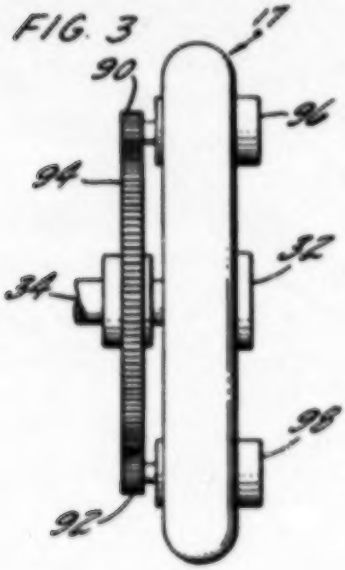

FIG. 4

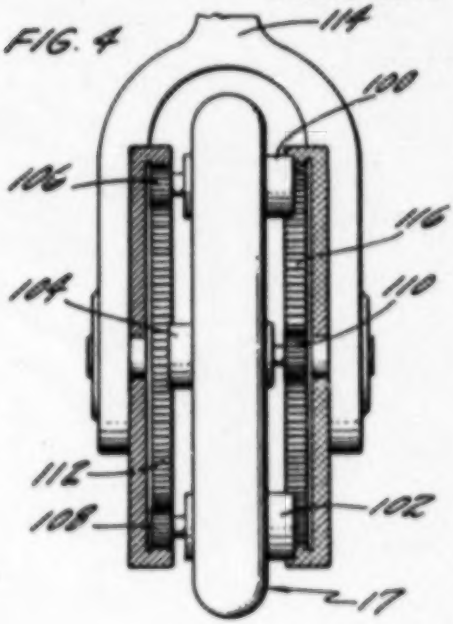

FIG. 5